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INDUSTRY ORGANIZING FOR OPERATION UNDER INDUSTRIAL RECOVERY ACT

American Paper & Pulp Association Being Reorganized to Act as Central Agency for Formulation and Administration of Codes of Fair Competition

The matter of most vital and timely interest now before the pulp and paper industry is that of national coordination under the provisions of the National Industrial Recovery Act which has just become law. Its effects are certain to be far reaching. There are many ramifications to the plan of operation, and its provisions will necessarily be adapted for best results in each industry, so at this moment no iron-bound statement may be made concerning the ultimate form it will take. Pulp and paper manufacturers are not yet under industry control, and it is perhaps as well to go slow for a time before jumping into it voluntarily. Many other industries are moving carefully until they see what the effects will be. Final judgment cannot be rendered until the Code of Fair Competition for the industry is formulated and accepted by the government.

This code is now being set up for the national industry, and will shortly be submitted for presidential approval. On June 2 various group representatives of the industry met in New York at the request of the American Paper & Pulp Association, to organize the industry for operation under the act. It was decided that the A. P. & P. A. should act as the central agency for the formulation of the code and to handle its administration. S. L. Willson, president of that body was selected as co-ordinator for the industry, to maintain contact with the government agencies and supervise further organization.

A. P. & P. A Expanding

The A. P. & P. A. is to be reorganized and expanded in order to function in its new capacity. General Hugh S. Johnson has been appointed by President Roosevelt as administrator under the act. His assistant, W. L. Allen, conferred with Mr. Willson and Charles W. Boyce, executive secretary of the A. P. & P. A. in Washington recently, working out details of the new plan so as to harmonize with the government program. Some of the groups such as the book paper group already have submitted their code or plan, but the general plan for the entire industry has not yet been made public. The waterproof paper manufacturers met in New York June 7 and organized the Waterproof Paper Manufacturers Association, which will cooperate with and work through the A. P. & P. A., with which they are affiliated, in the new plan of operation under industry control. At this meeting they elected an executive committee composed of Fred P. Wood, Simplex Paper Corp., Adrian, Mich., chairman; J. E. Cooke, Keystone Roofing Manufacturing Co., York, Pa.; A. M. Anderson, Sisalkraft Corp.; Karl E. Stansbury, Thilmany Pulp & Paper Co.; E. H. Angier, Angier Corp., Framingham, Mass. The manager of the association is D. A. Crocker.

Pacific Coast Groups

During the meeting of the Pacific States Paper Trade Association at Del Monte, Calif., in May, the paper jobbers named a committee to work on the industry control problem, as did the Coast mill men. The mill men represent a Coast association, comparatively inactive for some time, but still organized and in a position to get under way when needed, known as the Pacific Coast Association of Pulp & Paper Manufacturers.

At a meeting called by J. L. Murray of the Everett Pulp & Paper Co., the following mill committee was named: R. A. McDonald, Crown Willamette Paper Co., San Francisso, representing the wrapping and bag paper group; W. J. Pilz, Everett Pulp & Paper Co., Everett, Wash., book papers; W. S. Lucey, Grays Harbor Pulp & Paper Co., Hoquiam, Wash., writing papers; W. A. Brazeau, Inland Empire Paper Co., Millwood, Wash., newsprint, and A. B. Galloway, Oregon Pulp & Paper Co., Portland, Ore.

The jobbers' committee includes Harold Zellerbach, Zellerbach Paper Co., San Francisco, chairman; Otto W. Mielke, Blake, Moffitt & Towne, San Francisco; C. H. Beckwith, Carter, Rice & Co., Corp., San Francisco; Thomas A. O'Keefe, Pacific Coast Paper Co., San Francisco, and William Taverner of Taverner & Fricke, Los Angeles. A meeting was held in San Francisco June 14, but a definite code has not yet been announced.

The Newsprint Industry

The newsprint industry is to be considered a separate entity from the rest of the paper industry, as it is felt that special conditions in that industry require special treatment.

A meeting of 21 representatives of newsprint manufacturers was held in Boston June 7. They organized the Association of News Print Manufacturers of the United States, the original membership representing about 85 per cent of the industry's capacity.

A committee to work out their organization and to draw up a code was appointed, with W. A. Whitcomb, president of the Great Northern Paper Co., as chairman. The remainder of the committee consists of Edgar Rickard, president of the Pejepscot Paper Co., vice-chairman; R. M. H. Robinson, receiver for the Minnesota & Ontario Paper Co.; A. R. Graustein, president of the International Paper Co., and I. Zellerbach, president of the Crown-Zellerbach Corp.

Mr. Zellerbach represents the Pacific Coast mills, Mr. Robinson the central mills, Mr. Graustein the New York mills and Mr. Rickard and Mr. Whitcomb the eastern mills.

Canadian mills are of course not included in the organization, directly at least, but it is not anticipated that this will militate against the success of the plan for United States mills. The mills across the border will probably adjust their prices in accordance with the scale agreed upon on this side. Undoubtedly this will be done voluntarily in order that the U. S. government will not find it necessary to take steps to insure the act of efficient operation. This could be done either through licensing importers and controlling imports in that way, or by application of the embargo clause of the act which enables the president to impose import fees, limit or forbid imports.

How Industry Control Will Work; What It Is Expected to Accomplish

The primary purpose of the Industrial Recovery Act, the goal toward which all energies will be directed, is the renewing and increasing of purchasing power. This means a nation-wide re-employment movement, with an accompanying increase in wages. Whatever other benefits may accrue to the country as the plan runs its course will be welcome, but will be subservient to the main object of the program.

The government plans control of industry, but not merely for the sake of control. The thought is more to direct industry, to permit it to regulate itself along the lines considered fair by the majority of those in each line of business. Thus it resolves down to a question of each industry controlling itself according to the will of the majority, under supervision and with the approval of the government. While it applys only to interstate commerce, practically every unit of manufacturing industry will be affected. There are no exceptions made in the act.

The method and extent of the application of control for the pulp and paper industry will depend largely upon the Code of Fair Competition drawn up by representatives of the industry. This code will represent the voluntary cooperation the various units of an industry are willing to extend to their competitors. It will be similar to the usual Code of Ethics adopted by most trade associations, except in this case the members will be forced to live up to their agreements by the government, and outsiders who refuse to cooperate will not be permitted to use tactics which will nullify the work of the majority.

Every Factory to Operate at Full Capacity

The purpose of the measure is to enable every factory to run to its full capacity, as far as the United States can furnish the domestic consumptive requirements of each particular product. Only in this way can a maximum of employment be provided. The natural assumption follows that imports will be permitted only where they do not endanger the success of the plan through forcing American plants to close, as has been the case under depreciated currency competition.

This is provided for under the clause empowering the president to tax, limit or embargo the products of foreign countries in each instance where such imports militate against the program of domestic rehabilitation. On complaint of an affected industry, the president may levy a fee on imports sufficient to protect the industry, may completely embargo such imports, or may limit them by a system of licensing importers, thus controlling the quantities they may bring in.

Applied to the pulp and paper industry this means that it is anticipated that the entire industry will be enabled to run at capacity, that their market at home cannot be taken away from them by countries whose producers have cheaper money than our own or who have a trade advantage through lower wage standards, etc. Pulp and paper imports will theoretically amount to only the quantity required to meet our needs above domestic capacity production.

Reasonable Profit Assured

The manufacturer is to be assured a reasonable profit in return for granting higher wages and shorter working hours, and is to be relieved of unfair competition from within or without the industry in this country or abroad.

The original idea was to permit price fixing by agreement, but it is understood this has been abandoned in favor of agreements not to sell below cost. This will leave a reasonable amount of competition, but will eliminate cut-throat competition and force an accurate analysis of production costs.

Control Procedure

In general, procedure in going under industry control is as follows. A master code is prepared by the national association of each industry, laying down general principles to which the different branches of the industry are expected to subscribe. Supplementing this general code will be special codes relating to the specific problems of each individual industry or branch or territory, and in harmony with the general principles of the master code.

Such codes will set forth rules of conduct prohibiting certain unfair methods of competition, specifying the hours per week for individual employees, the minimum wages to be paid, agreeing not to sell below cost, etc. In some industries they have gone so far as to specify that the central agency shall allocate orders among their members so that all get a fair share at a fair price.

Upon approval of the code by the government, all members of the association will be bound by these regulations, and can be severely penalized by the government for their infraction. Members of the industry who refuse to go under the control plan through their associations will be licensed for operation by the government under conditions which will make it impossible for them to resort to ruinous merchandising practices, disorganizing the industry, nullifying the program, and underpaying and overworking employees.

Employees Organizations

Employees are given the right to organize under the law and to negotiate with employers in setting wages. While official appointment has not been made, it is reported that Adam Wilkinson, commissioner of labor for the American Writing Paper Co., will be labor advisor for the paper manufacturing industry. Mr. Wilkinson served on the War Labor Board during the war, and has had much experience with labor in the paper industry. He has been working with the A. P. & P. A. in its labor activities.

The American Federation of Labor is engaged on a program for the "unionization of America", and will probably not overlook the pulp and paper industry. Mill operators will likely find it necessary to discuss wages and other labor conditions with the labor unions, and in some localities additional unions or branches may be formed.

The practical effects of industry control on western mills will consist chiefly of: shorter hours, higher wages and larger number of employees; opportunity to operate at full capacity; assurance of selling the output at a reasonable profit; relief from cut-throat competition within the industry and from unfair and unnatural competition from foreign manufacturers.

Provisions of the New Industry Control Law

We all know that the Industrial Recovery Act has become law, that it is a radical departure from previous practice, but few know definitely what effect it will have upon each one of us individually, or collectively as individuals in the industry.

Various rumors and opinions are passing around, many of them without authoritative knowledge for a basis. Until the code for the pulp and paper industry is completed and approved, no estimate of the situation may be accurately made except through knowledge based on the provisions of the act itself.

For this reason, Pacific Pulp & Paper Industry publishes here for its readers an analysis of the sections of the act of primary interest to the industry, stripped of all legal phraseology and setting forth the main essentials.

Section 1—To remove obstructions to the free flow of interstate and foreign commerce tending to diminish widespread unemployment and disorganization of industry, provides for cooperative action among trade groups:

(a) To induce and maintain united action of labor and management under governmental sanction and supervision.

(b) To eliminate unfair competitive practices.

(c) To promote fullest possible utilization of present productive capacity of industries.

(d) To avoid undue restriction of production (except as may be temporarily required).

(e) To increase consumption of industrial and agricultural products by increasing purchasing power.

(f) To reduce and relieve unemployment.

(g) To improve standards of labor.

(h) To rehabilitate industry and to conserve natural resources.

Section 3 (a) provides for the establishment for trades or industries or subdivisions thereof, of Codes of Fair Competition, to be submitted by trade or industrial associations or groups to the president for approval, provided:

1. No inequitable restrictions are imposed on admission to membership in the association or group making application.

2. Such group or association is truly representative of the industry or its subdivision.

3. Such codes are not designed to promote monopolies or to eliminate small enterprises and will not operate to discriminate against them.

4. Such codes do not permit monopolies or monopolistic practices.

As a condition of his approval of Codes of Fair Competition, the president may impose such conditions as he may deem necessary, including requirements for the making of reports and keeping of accounts, for the protection of consumers, competitors, employees, and others.

Section 3 (b) provides that after approval by the president of a Code of Fair Competition, the provisions of that code shall be the standards of fair competition for the industry, violation thereof being deemed an unfair method of competition.

Section 3 (c) invests jurisdiction in the district courts of the United States to prevent violations of such codes by instituting proceedings in equity.

Section 3 (d) gives to the president the power, when no code of fair competition has been approved, and upon complaint that abuses inimical to public interest and contrary to the policy of this act are prevalent, to prescribe and approve a code of fair competition for that industry which shall be mandatory upon the trade.

Section 3 (e) authorizes the president, on his own motion, or an complaint of any group or organization that articles are being imported in substantial quantities or in increasing ratio to domestic production under such conditions as to endanger the maintenance of a code or agreement to have immediate investigation made by the Tariff Commission, and, if investigation warrants such action, to impose payment of fees and to limit the total quantity of imports as he may believe it necessary.

The president is further authorized to forbid importation unless the importer shall have first secured license to import from the secretary of the treasury, subject to such regulations as he may prescribe.

(Domestic newsprint manufacturers, faced with increased costs, may increase prices to a point where foreign manufacturers will be able to undersell them materially Upon complaint of the manufacturers that imports are endangering the Code of Fair Competition, it is conceivable that either embargoes or duties will be sought.)

Section 3 (f) provides for a fine of $500 for each violation of a code of fair competition, after approved by the president, each day such violation continues being deemed a separate offense.

Section 4 (a) The president is authorized to enter into agreements with groups or industries, or to approve voluntary agreements between such groups or industries provided they are consistent with the requirements of the provision that no code may be approved which is designed to promote monopolies, etc.

Section 4 (b) Authorizes the president, whenever he shall find that destructive wage or price cutting or other activities contrary to the act are being practiced by any industry, to license the business enterprises in that industry, after which no business may continue without having first obtained a license to do so.

The president may suspend or revoke such license, and his action shall be final if in accordance with law.

Anyone conducting a business without a license, after that industry has been licensed, or violating any condition of the license, may be fined not more than $500, or imprisoned not more than six months or both, and each day violation continues shall be deemed a separate offense.

Section 5. While this act is in effect and for sixty days thereafter, any code, agreement, or license issued and approved and in effect under this law, and any action complying with the act taken during such period, shall be exempt from the provisions of the anti-trust laws of the United States.

Section 6. (a) Provides that no trade or industrial association may receive the benefits of this act until it has filed with the president statement containing such information of its activities as the president shall prescribe.

Section 6 (b) Provides that rules and regulations may be prescribed by the president to insure that any organization is truly representative of the trade or industry which it purports to represent.

Section 6 (c) Gives to the Federal Trade Commission the power to

make such investigations as may be requested by the president to enable him to carry out the provisions of the act.

Section 7 (a) Provides that every Code of Fair Competition agreement or license approved by the president must contain the following conditions:

1. That employees shall have the right to organize and bargain collectively through representatives of their own choosing, and shall be free from restraint or coercion of employers in the designation of such representatives, in self-organization, or other concerted activities for collective bargaining or other mutual aid protection.

2. That no employee or person seeking employment shall be required as a condition of employment to join any company union, or to refrain from joining, organizing or assisting a labor organization of his own choosing.

3. That employers shall comply with a maximum hours of labor agreement with minimum rates of pay and other conditions of employment, as prescribed or approved by the president.

Section 7 (b) Provides that hours of labor and minimum rates of pay, and other conditions of employment shall, if possible, be established by mutual agreement, and after approval by the president, shall be a part of the code of fair competition.

Section 7 (c) Provides that where no such mutual agreement has been approved by the president, he may, after investigation, and if found advisable, prescribe a limited code of fair competition, fixing maximum hours of labor, minimum rates of pay and other conditions of employment as he believes necessary. The president may differentiate according to the experience and skill of the employees and according to the locality of employment, but no classification according to the nature of the work may be made which might tend to set a maximum as well as a minimum wage.

(The above section presumably tends toward destruction of the principles of open shop, as evidenced by the activities of the president of the American Federation of Labor, who has been holding meetings for the avowed purpose of the "unionization of America." President Green, it is reported, is on record as having stated that he would recommend that an "organizing campaign be launched so that the unorganized workers of the country, through organization, may participate in the benefits of the act, and may demand that employers negotiate with their chosen representatives in the establishment of decent wages, shorter hours, and the improved conditions of employment."

(Various industries have recognized the danger to the open shop and protested to the Senate Finance Committee when that Committee was holding hearings on the bill. The American Iron & Steel Institute stated to the Committee that while that industry was willing to bargain with its employees, it was opposed to conducting negotiations with those outside its organizations.)

Section 10 (a) Authorizes the president to prescribe such rules and regulations as may be necessary, as well as fees for licenses and for filing codes of fair competition and agreements. Any violation of such rules or regulation is punishable with a fine of not more than $500, imprisonment for not more than six months, or both.

Section 10 (b) Authorizes the president to cancel or modify any order, approval, license, rule or regulation.

Title II of the Industrial Recovery Bill deals with Public Works and Construction Projects, Increased Taxation.

Board of Advisors and Assistants Appointed by Industrial Administrator

Executive assistants have been appointed by Gen. Hugh S. Johnson, administrator of the National Industrial Recovery legislation, by Secretary of Commerce Roper, an industrial advisory board; by Secretary of Labor Perkins, a labor advisory board — while it was announced that later a consumer's advisory board would be appointed. The membership of these administrative bodies follows.

Administrator Johnson's appointments were:

Assistants — Assistant administrator for industry—Dudley Cates, Chicago, vice president Marsh & McLennan, insurance. Assistant administrator for labor — Edward F. McGrady, Washington, D. C., legislative representative of the American Federation of Labor. Chief of the legal division—Donald R. Richberg, Chicago, railway labor attorney. Chairman of the labor advisory board—Dr. Leo Wolman, of Columbia University, New York City. Chief of the research and planning division—Dr. Alexander Sachs, New York.

Deputy Administrators—(To conduct hearings and make investigations) W. L. Allen, New York City, consulting metallurgist and former chairman of the Sheffield Steel Co.; Prof. Earl D. Howard, Northwestern University, Chicago, formerly vice president of Hart, Schaffner & Marx, Chicago, manufacturers of men's clothing; Arthur Whiteside, president of Dun & Bradstreet, New York City; C. C. Williams, retired major general and chief of ordnance during the World War; K. M. Simpson, consulting engineer and metallurgist, and Nelson Slater, textile manufacturer.

The industrial advisory board was named by Secretary of Commerce Roper, as follows:

Industrial Advisory Board—Austin Finch, North Carolina manufacturer; Edward N. Hurley, chairman of the Hurley Machine Co., Chicago; Alfred P. Sloan, jr., New York, president of General Motors Co.; Walter C. Teagle, New York, chairman of the Standard Oil Co. of New Jersey; Gerard Swope, New York, president of General Electric Co.; Louis Kirstein, Boston, Mass., vice president of William Filene's Son Co., and William J. Vereen, Moultrie, Ga., cotton manufacturer.

The labor advisory board appointed by Secretary of Labor Frances Perkins is as follows:

Labor Advisory Board — William Green, president American Federation of Labor; John E. Frey, metal trades department American Federation of Labor; Joseph Franklin, president International Boiler Makers' Union; Sidney Hillman, president Amalgamated Clothing Workers; Rev. Francis Haas, National Catholic Welfare Council; Rose Schneiderman, secretary Women's Trade Union League.

West Must Have Adequate Representation in Planning Industry Control Program

Organization of the industry is being planned by representatives of manufacturers working through the American Paper & Pulp Association. Pacific Coast producers have been represented at these meetings, yet the preponderance of influence in the A. P. & P. A. is in other sections of the United States. It is reasonable to point this out and to caution that the Pacific Coast must have adequate and fair representation in the councils that decide the course of action for the industry.

Some of the Coast mills are members of the A. P. & P. A., some are not. Indications are that all producers will have to be members of that association or members of a subsidiary group affiliated with the national body.

It has been suggested that the Coast group, the Pacific Coast Association of Pulp & Paper Manufacturers, be broadened in scope and activity, handling the program for the western mills and working through the central agency to be named by the government. It is felt that only through such unified action can the interests of the western industry be properly cared for.

In the plan for industrial recovery there should be no conflict between the various producing regions, yet it is obvious that conditions vary in the different localities. Operators and labor in the South cannot be expected to find the program set up for eastern mills exactly suited to their requirements for sensible operation; nor can Pacific Coast producers logically be required to precisely follow a plan outlined for another section where much different conditions prevail.

Much the same situation exists in the lumber industry, which has already taken steps to harmonize the various regions of the country. In the West the West Coast Lumbermen's Association has prepared a code suited to the peculiar needs of their members among the fir and hemlock mills. The Western Pine Association has taken similar action, the same is true of southern pine mills, hardwood producers, etc. All work through the National Lumber Manufacturers Association, which cooperates with each regional group, harmonizing the codes drawn up to bring them as nearly into conformity with each other as possible. In this way no inequitable conditions are imposed upon any branch of the industry, no region will obtain any unfair advantage over another, and control of the region is centralized within the region, where it belongs.

Codes are being drawn for the various groups within the paper industry according to type of product manufactured, yet this does not entirely meet the conditions inherent in various territories. While it is desirable to keep away from unnecessarily complicated divisions within the industry and possible resulting confusion, it still would be of material advantage to regional units to operate under a code suited to their operating conditions, coordinated with the national plan, and assuring them of equal opportunity under the provisions of the act.

Embargo Clause Victory For Proponents of Currency Legislation

Section E. Title I of the National Industrial Recovery Act constitutes an important victory for the many leaders who have waged a ceaseless fight during the past two years for legislation to counteract the devastating effects of depreciated currency competition on American industry.

While the United States has abandoned the gold standard, many foreign currencies are still well below their natural level and the previous situation still exists, although not to so great a degree as formerly.

The so-called embargo clause of the act gives the needed protection so earnestly sought by industrial leaders, including the publisher of this journal, Miller Freeman, who acted as chairman of the Foreign Exchange Committee of the Banking and Industrial Conference.

Upon passage of the act, George Gunn, Jr., vice-president of the Puget Sound Pulp & Timber Co., wired this publication from Washington, D. C., as follows: "Thought you would be interested to know embargo clause national recovery act is culmination concerted effort on depreciated foreign currency stop whole organization waging fight coordinated under Jack Underwood caused administration to see folly original bill without embargo clause stop law clearly states president shall embargo imports if in danger maintenance trade codes also gives president power levy fee against imports stop this fee can be considered same as countervailing tax stop also fixes quota of imports and licensing of importer all in case of violation of codes stop believe industries in which you are interested should immediately perfect trade association under this law."

NEWSPRINT PRODUCTION

Production in Canada during April, 1933, amounted to 147,759 tons and shipments to 161,266 tons, according to the News Print Service Bureau. Production in the United States was 74,507 tons and shipments 76,095 tons, making a total United States and Canadian news print production of 222,266 tons and shipments of 237,361 tons. During April, 19,048 tons of news print were made in Newfoundland and 1,179 tons in Mexico, so that the total North American production for the month amounted to 242,493 tons.

The Canadian mills produced 112,599 tons less in the first four months of 1933 than in the first four months of 1932, which was a decrease of 17%. The output in the United States was 80,178 tons or 21% less than for the first four months of 1932, in Newfoundland 8,233 tons or 9% less, and in Mexico 1,094 tons more, making a total decrease of 199,916 tons or 18%.

Stocks of news print paper at Canadian mills are figured at 37,232 tons at the end of April and at United States mills 21,171 tons, making a combined total of 58,403 tons compared with 73,498 tons on March 31, 1933.

Pacific Coast Mills Hum With Increased Activity

The last six weeks have wrought considerable change in the operating status of the industry on the Pacific Coast. Where plants were idle or operating part time several months ago, today they are humming with activity, and pulp is again moving in large volume.

It cannot be definitely said how much of the improved buying is attributable to speculative operations, but the general concensus of opinion is that orders for speculation are at least in the minority. Jobbers' stocks of paper have been low, paper mill pulp stocks have not been normal. The definite upturn in volume of paper sales, the moderate increase in advertising lineage, and other similar controlling factors have heightened the demand to a point where former stocks are entirely inadequate.

As pulp stocks are built up, there may be some slackening in orders, but it is generally hoped that the pick-up will be sustained long enough to bridge the gap between filling in stocks and steady demand. As it now stands, most of the Pacific Coast mills now have orders for some time ahead and can definitely see full time operation well into the fall, and in some cases, for the remainder of the year.

One mill executive said, "Six weeks ago we had only ten days run ahead of us and didn't know what was ahead of that. Yet in that same month we ran 22 days, including several Sundays, and today we see practically full time operation for some time to come."

Estimates for car loadings in the paper industry for the next quarter are 27% above the last.

Another mill manager recently reported, "We are running steadily now and have orders to carry us through the summer. The mill has had to run some Sundays, in fact, we are having to hustle to meet our commitments."

Still another said, "Last year we operated 210 days out of a possible 312. A little while back this year it looked like we would have only 108 days run in 1933. Within the past few weeks there has been such a definite increase in orders that right now we are assured of at least the same run as last year, and very possibly more."

The Olympic Forest Products Co. at Port Angeles is again in operation and it is believed they will continue through the summer. The Anacortes mill of the Puget Sound Pulp & Timber Co. is being reconditioned and will undoubtedly be cooking pulp again shortly. Other mills are making various improvements for higher efficiency and increased production, reflecting the very much improved tone of the entire western industry.

Chemical Wood Pulp Prices Register Definite Gains

After having wavered on the edge of price increases for several weeks, chemical pulp prices have finally taken the jump, and foreign produced pulp has risen $1.00 to $3.00 per ton. Prime Swedish kraft pulp has advanced as much as $5.00 per ton.

Since the United States abandoned the gold standard, the Scandinavian producers have seen their realized prices drop, due to the rise in their exchanges. In general, the difference has amounted to 15 per cent, which cannot be absorbed. Although hopeful that the dollar would show sufficient strength to enable them to maintain their low prices and keep their hold on the market, foreign sellers have evidently come to the conclusion that a price rise is inevitable and have started the movement for their own protection.

The upward movement started just before the middle of June, at which time the market was firm, but still at the same level. Buyers were diffident for some time, and refused to purchase at any increase in price. A few orders for spot pulp were sold at higher figures, but advance orders commanded no higher price. At the same time, producers were chary about making any long time commitments at the prevailing scale. Continued rise of sterling and currencies pegged to it, broke the stalemate when continued refusal to accept orders at previous prices forced buyers to raise the ante.

While price advances have been comparatively slight, the important point is regarded as being that pulp prices have finally started to rise along with other commodities.

It is understood that minimum prices for foreign chemical pulp for the immediate future will be $45 at American Atlantic ports for prime bleached sulphite, $37 for prime strong unbleached sulphite and $30 for prime Swedish kraft pulp. It is possible that these prices will be still further affected by the Industrial Control Act, when it gets under way. If and when domestic pulp prices are set, presumably at a higher figure which will permit better wages and a reasonable profit, it is anticipated that importers will be required to operate under a license system which would prevent sales of foreign pulp at prices detrimental to the American producers.

Domestic pulp prices have not so far been affected to any marked degree. It is, however, anticipated that strengthening of the prices for Scandinavian pulp will result in better conditions for domestic producers, and an advance in price for their products.

Nevertheless, domestic pulp mills are experiencing a much enlarged demand and most of those on the Pacific Coast at least, are running to capacity.

LEADBETTER MAKES FAST TRIP

F. W. Leadbetter, president of the Oregon Pulp & Paper Co., Portland, has been doing some fast and extensive traveling. Last month he left for South America, going to Miami and then on to Rio de Janiero by plane. In Miami he spent some time with two of his firm's directors, H. H. Hector and H. B. Fultz, and took time to do a bit of fishing in the gulf stream.

His trip on the Pan-American Airways from Miami to Rio de Janiero took seven days to cover the distance down the east coast of South America. From Brazil he embarked as a passenger on the Graf Zeppelin, reaching Germany four days later. Flying from Germany to England, he boarded the express liner Europa to reach New York in another four days, enroute back to Portland.

The Anacortes plant of the Puget Sound Pulp & Timber Co., adjoining the Morrison Mill Co. Both of these plants are to be reopened August 1.

Puget Sound Pulp & Timber Co. To Reopen Anacortes Plant

Reflecting the much improved conditions in the western pulp industry, the Puget Sound Pulp & Timber Co. has announced the early reopening of their plant at Anacortes, Wash. Having worked out a satisfactory revised contract for water, plans are rapidly going ahead for production in about 30 days.

In a statement to Pacific Pulp & Paper Industry, Perry F. Knight, vice-president of the company, says:

"Present plans contemplate the reopening of this plant about August 1st. Present arrangement is to secure chips from the Morrison Mill Company's plant adjoining the pulp plant. To provide the chips, Morrison is putting in a modern chipping plant. Chips will be conveyed direct to our digester room from the Morrison plant by belt conveyor.

"This combination with the Morrison Mill Co. will assure the steady operation of the Morrison Mill Company's Anacortes plant, and it is expected that our pulp plant at Anacortes will operate continuously after it starts.

"The putting of these two plants into operation will mean the steady employment of approximately 200 men directly in the plants at Anacortes, plus whatever additional employment is required to supply the wood requirement of the plant."

The Anacortes plant, the Fidalgo division, started operations in 1927 and the capacity was increased about a year later. Due to depressed conditions and depreciated currency competition, it has been idle for the last two years.

O. W. Mielke Issues Statement on Recent Coast Newsprint Price Cut

O. W. Mielke, general manager of Blake, Moffitt & Towne, San Francisco, recently issued a statement concerning the reduction in the price of newsprint on the Coast, setting forth their position with regard to this situation. His statement says:

"Recently certain large eastern manufacturers announced a discount of $5.00 per ton on roll newsprint contracts, which had the effect of bringing the current market price down to $40.00 per ton. This very drastic and severe reduction is especially unfortunate in face of the present stiffening in commodity prices in general. The market, however, has been established at this figure largely because of the demoralized condition of the newsprint industry in the east where many mills are now in the hands of receivers.

"The situation is still more aggravated by reason of the fact that some publishers here on the Coast have responded to the very low prices which northern European mills have been enabled to offer due to the depreciated currency condition.

"To attempt, therefore, to hold the market at the present level would only serve to invite eastern and European competition and threaten further loss of important tonnage which rightfully belongs on the Coast where it is helping to maintain payrolls and investments.

"Rather than permit this to occur, we have met this eastern price reduction of $5.00 per ton beginning with June 1, 1933, and ending May 31, 1934. This is in keeping with our declared policy a few years ago when we became the direct mill selling agents on the Coast for the Powell River Company, Ltd., of always keeping our customers in a competitive position in their purchases of newsprint.

"We regret that this action has become necessary and look forward to a time when conditions may warrant a return to better prices and some degree of profit for the mills, which maintain such a large and important investment here on the Coast."

A. N. P. A. Interprets Forest Service Report As Advocating Increased Newsprint Imports

Out of the activities of the American Newspaper Publishers Association comes another example of their apparent disregard for the welfare of the American pulp and paper industry, and of their desire to impede further development of the industry in this country so that nothing may interfere with their continued use of tariff-free newsprint produced by foreign labor.

Not long ago they strenuously opposed the enactment of depreciated currency legislation, the need for which has been so forcefully illustrated since that time. Their latest similar activity is the use of an official Forest Service report to foster the old forest depletion theories, and to cloak their arguments for cheap foreign paper with government authority, contrary to the facts of that report.

A. N. P. A. Committee Report

A short time ago Pacific Pulp & Paper Industry obtained a copy of the report of the Forestry Committee of the A. N. P. A. submitted at their annual meeting, and was surprised to read:

"In Bulletin No. 6107, issued on April 18, 1933, there appears a valuable report on the United States Forest Situation which we trust you have read. It is especially interesting to note that The Forest Service in concluding this report says: 'It may even prove to be desirable and to the ultimate benefit of the country that imports of pulp and newsprint should actually be temporarily increased in order to reduce the present drain upon our timber supply until the plan (outlined in the report) has had time to produce its initial benefits.'

"In this connection it is well to remember that there will be efforts to secure duty on our products. . . ."

This report was given publicity and wide circulation through publication in the April 29 issue of Editor and Publisher, the journal of the newspaper publishers.

Pacific Pulp & Paper Industry doubted that the Forest Service had made any such statement and wrote Elbert H. Baker of the Cleveland Plain Dealer, chairman of the newspaper Forestry Committee, inquiring as to the source of the statement, and also wrote the Forest Service at Washington. Mr. Baker replied that "The Forestry report to which you refer contained in part quotations from a federal bulletin and from a letter of an old forestry friend. . . ." To the credit of the Forestry Committee it may be said that their report also quoted the "forestry friend" as saying that there need be no scare about shortage of wood for pulp and other purposes in this country.

Forest Service Reply

The Forest Service, after tracing the matter, replied:

"On April 18, 1933, the American Newspaper Publishers Association issued Bulletin 6107, which briefed the conclusions reached by the Forest Service in preparing a report entitled 'A National Plan for American Forestry' in response to Senate Resolution No. 175 (of the 72nd Congress, 1st Session). The concluding paragraph of Bulletin No. 6107 of the A. N. P. A. is as follows:

> " 'Until that time comes, however, it is obvious that the present excess of annual drain over annual growth should be kept at as low a figure as possible, and that any increase in this drain caused by a duty of any kind against newsprint or wood pulp would seriously militate against the success of the plan of the Forest Service and necessarily postpone the day when it can become effective. It may even prove to be desirable, and to the ultimate benefit of the country, that imports of pulp and newsprint should actually be temporarily increased in order to reduce the present drain, until the plan has had sufficient time to produce its initial benefits.'

"Part of the above statement was erroneously credited to the Forest Service in an article on page 77 of the April 29 issue of the Editor and Publisher The Fourth Estate. (The A. N. P. A. Forestry Committee report—Editor.) The statement does not appear in the Forest Service Report 'A National Plan for American Forestry', a copy of which was mailed you some time ago."

Thus the Forest Service denies responsibility for this pernicious statement regarding our forest resources. No such conclusion can be found in the Forest Service report, and no such meaning can logically be drawn from it.

A check of the original Bulletin No. 6107 of the A. N. P. A. shows that while it does not directly impute to the Forest Service this statement, it plainly implies that it is one of the conclusions of this government agency. It is natural to take this meaning from the Bulletin inasmuch as the entire pamphlet is supposed to be a summary of the Forest Service report. This is evidenced by the fact that the members of the A. N. P. A. composing the Forestry Committee interpreted it so, and consequently mistakenly quoted it as an official governmental conclusion, for which the Committee itself was not to blame.

Unfair to Forest Service

The circulation of such misconceptions of our forest situation by the central office of the A. N. P. A. among its members can do untold harm to the pursuance of a proper forest policy in this country. Whether or not such bulletins are released to the general public, their deleterious effects will be felt through the coloring of news, through prejudiced editorials, and they will serve to heighten the mistaken conviction of newspaper publishers all over the country that their continued demands for cheap foreign newsprint are clothed with the sanctity of national welfare.

In briefing the forestry report the A. N. P. A. misled their members and the public as to the situation of our forest resources and industries. They have evidently misconstrued the conclusions of the report wilfully, with the intent of combatting and building up resistance to any future move for protection of our domestic pulp and paper industry, which might possibly affect the newspapers from the financial standpoint.

Such tactics are both dishonest and unfair, and should be vigorously protested. Organizations should not be permitted to take advantage of government agencies by quoting them, directly or by implication, as authority for statements which foster erroneous ideas concerning national resources and industries, for their own selfish purposes.

Developments in Design of Modern Fourdrinier Paper Machines*

By J. E. GOODWILLIE[1]

It is always an inspiration to be present at a TAPPI convention and learn of the recent technical advances in the paper industry. Real progress is being made every year toward a better understanding of the fundamental physical and chemical relationships underlying the processes we use, the technic of control is steadily improving and many of the disturbing variables in operation are being eliminated. In spite of all of these advances, I would like to call your attention to the fact that it still takes a good papermaker to turn out a creditable sheet of paper. There are so many ways of going wrong in the forming and drying of a sheet that even with a furnish of the best quality and uniformity, it is essential conditions on the machine and the setting of the various adjustable parts of the machine itself be just about perfect if present day standards of quality and speed of operation are to be met.

The function of the paper machine designer and manufacturer is, of course, to place in the operator's hands the very best known equipment for his particular requirements, and in this way assist him in making the best sheet possible from the stock furnished him. We also have the requirements that this be done at the highest possible production rate, and at the lowest possible operating and maintenance cost. The modern Fourdrinier paper machine is keeping pace with the requirements of the industry by a steady succession of improvements and I believe you will be interested in going over very briefly some of the advances in machine design recently made by the engineers of the Beloit Iron Works.

New Slice

Starting up at the head box, a new slice has been developed which gives a maximum of flexibility to meet the varying conditions of stock, machine speed, and type of sheet. The complete unit is made up with one or two slices that can be adjusted in the direction of the machine relative to the breast roll. The second or last slice has an adjustable lip that is used for leveling the sheet; this lip has been carefully designed to eliminate all chance of lumps collecting at this point. The slice as a unit is strongly mounted on a stiff, rigidly supported apron board which is fitted with a convenient method for securing the apron cloth. All of the different slice adjustments can be made while the machine is in operation.

The shake for the table roll section is now usually made in two or three sections, so arranged with joints and pivots that the stock can be shaken at the point desired. This makes it possible to suit the location, the amount and the speed of the shake to the condition of the stock, the type of sheet, and the machine speed. The table rails are of steel, designed for maximum rigidity and minimum weight. The roll shells are of a special aluminum covered with a material which protects the roll from the corrision which would result from direct contact with paper stock. The mounting of the table rails and the connections between these rails and the shaking arms is made of a strong, flexible material which has the characteristic of being able to withstand continuous flexing action without developing fatigue or crystallization.

Suction Boxes

It is usually desirable to oscillate the suction boxes to keep the wire free and prevent grooving of the box covers. Older designs have embodied various arrangements of sliding parts, and the resulting wear has given trouble due to misalignment. To prevent this the boxes are now mounted on rails which in turn are supported on flexible members; the general construction being very similar to that used in the new table roll section support. Another important improvement at the suction boxes is the incorporation of individual water separators in each box. This permits adjusting the vacuum on each box by throttling its connection to the common vacuum header, without any danger of the violent fluctuations in vacuum that usually accompany any attempts along this line. The boxes are now made of stainless steel, giving great rigidity in the direction of wire travel to avoid any possibility of chattering.

The wire stretch is now entirely automatic. Having decided upon the wire tension to be carried, it is only necessary to place the corresponding weights on the counterweight system for the stretch roll and that tension will be uniformly maintained regardless of the relative positions of the tension roll and the adjustment rolls.

There have been no recent changes of any consequence in the design of the Beloit suction couch roll and these rolls are continuing to make wonderful records of trouble-free service in a long list of mills. The Removable Fourdrinier arrangement has been simplified somewhat further; for example, the breast roll mounting has been changed so that the roll swings down on a pair of arms when a wire is to be changed.

Suction Presses

Rubber covered suction presses have been in service too long to be considered a new development, but their true value as an all-around contribution to papermaking is still not fully appreciated. There have been very few instances in the history of paper machine development where a single item of equipment has effected such a broad general improvement. A great volume of operating data now clearly shows that the rubber covered suction press makes possible the production of a better sheet of paper at higher rates of speed, and this with substantial reductions in felt costs and steam costs. They give you a safer and better running press section and take a big load off the shoulders of the papermaker.

In connection with the press section, the top press roll mounting has recently been very considerably improved. In the older designs, the pressure between the rolls was secured by means of weights and a multiple lever system; this arrangement created a tendency for lack of uniformity not only because of friction at the various bearing points,

*Presented at the spring meeting of the Pacific section of TAPPI, Longview, Wash., May 5-6, 1933.

[1]Engineer, Beloit Iron Works, Beloit, Wisc.

but also because of the very considerable inertia of the heavy parts. If rolls or journals became out of true even a slight amount, the levers and arms would move up and down; the result was that when the weights were moving up the nip pressure was heavy, and when the weights were moving down it was light. To overcome this situation the new Beloit method of press weighting was developed.

Each press section felt is provided with a motor operated stretch device. A meter indicates just what tension is being carried in the felt at all times while adjustment is being made.

New Dryer Drive

The new chain drive for the dryer section has proved to be a very practical and advantageous arrangement. The drive is completely enclosed in a sealed casing, thus keeping the oil in and the dust and dirt out. An automatic unit has been developed which holds back lash to a minimum, even in case the main drive unit should stop and the inertia of the dryers carry ahead for a short time. A new high speed water remover has been developed which keeps dryers free of water at all times, this regardless of whether the machine speed is in the lower range where the water tends to form a pool in the bottom of the dryers, or in the upper range where it tends to form a complete film all around the inside of the dryer shell. A balanced type of steam joint has been perfected. This is an oilless fitting embodying a carbon disc, and is very nearly frictionless at all steam pressures.

Lack of time prevents a consideration of many new features in calender stack, reel and rewinder design. The trend is all toward fingertip control with reliable indicators to show the operator just how his machine is running. Means are provided for winding reels of just the desired degree of hardness. The tension in the sheet going to the rewinder is controlled by air pressure in a cylinder and an indicator shows the amount of that tension. Finished rolls are automatically removed from the rewinder and deposited upon trucks or conveyors. In one arrangement, the winder shaft is withdrawn from the rolls and returned to its position in the machine all without any effort other than the pressing of a button.

Mechanical Drive Units

The Beloit mechanical drive has been supplemented with some new units which further increase the flexibility and dependability of the drive. The enclosed hypoid and spiral bevel gear units with their hardened steel gears, antifriction bearings, positive lubrication and oiltight enclosing casing are well known. A new flexible coupling has been designed which does not need lubrication or any attention after its original installation. This coupling is of the micarta disc type and can be used in pairs connected by a length of floating shafting allowing for a maximum of misalignment. A very interesting development is a new magnetic clutch which, while of comparatively small size, has an unusually high clutch capacity and a very small current consumption. Its arrangement and construction have been carefully worked out with the result that clearances can be adjusted or friction surfaces replaced without delay and without any special skill or experience being necessary.

Some time ago the Beloit Works became interested in the possibilities of a new process brought out by the Minton Vacuum Dryer Corporation called Solvent Sizing. The first commercial installation of this process has been made in the mill of the Longview Fibre Company, Longview, Washington, and for the past several months Beloit has been cooperating with the Minton Corporation and the Longview Fibre Company in development work on this installation. Very encouraging progress has been made and it is expected that some interesting data will be available in the near future.

Solvent Sizing

A brief description of this process may be of interest to those who are not familiar with it. It is essentially the sizing of paper after the forming and drying operation has been completed, using solutions of rosin, wax, synthetic resins, or any one of a number of other sizing agents in a volatile solvent. The unsized sheet is passed through the nip of a size press where it is impregnated with the solution, the solvent is then evaporated from the sheet leaving the sizing material behind. This entire operation is, of course, carried on in an enclosed chamber and the solvent recovered for reuse. No sizing material of any kind is introduced into the beater or stock system; to illustrate, a sheet which is to have eventually a very high degree of sizing would be formed and dried in the water-leaf state, and before passing into the solvent sizing press would be about as absorbent as a sheet of toweling.

It has been repeatedly demonstrated that leaving sizing material out of the beater results in a stronger, better sheet of paper. This is probably due to the formation of a better bond between the fibers themselves when no sizing is present. The sizing material is used more effectively by the solvent method, resulting in either a higher degree of sizing or the same sizing with less sizing material. Other advantages are easier preparation of the stock, better wet end conditions and easier drying.

In the development work at Longview, much credit is due the executives and staff of the Longview Fibre Company for their fine cooperation and very helpful suggestions.

HAWLEY MILL CHANGES

Hawley Pulp & Paper Co. has changed its No. 2 machine over from a Harper to a special pickup job for lightweight papers. The operation involved turning the Fourdrinier around, reversing the wet end, and installing a special pickup arrangement for the manufacture of tissues and medium weight papers. The job was completed near the end of May and is now running in splendid shape. Within 15 minutes of the startup, it is reported, the machine was producing a commercial grade of paper.

INTERCOASTAL RATES

The new tariff of the U. S. Intercoastal Conference brought some changes in eastbound rates to the pulp and paper trade. While the old proportional rate of 20½ cents per 100 pounds remains on wood pulp, its application is restricted for shiments destined to certain Michigan and Ohio points. A new item provindes a rate of 25 cents on woodpulp in 24,000-pound minimum lots when compressed to a density not exceeding 60 cubic feet for 2,000 pounds.

Item 924, wrapping paper for remanufacture, 40 cents per 100 pounds, minimum 24,000 pounds. This rate is the same, but the application is broadened by reducing the minimum diameter of rolls from 20 inches to 18 inches.

No change was made in the 45 cent rate on wrapping paper and paper bags, in the 50 cent rate on printing paper, in the 35 cent rate on woodpulp board or strawboard or in the 40 cent rate on newsprint in 100 ton lots. All rates as before are subject to the 3% surcharge.

Making Chemicals For Northwest Industry

How Chlorine and Caustic Soda for the manufacture of pulp and paper are made at the Tacoma Electrochemical Company plant

Pulp and paper producers are familiar enough with the chemical materials they use in their manufacturing processes, but sometimes do not have specific knowledge of how these materials are made or details of the plants in which they are produced.

It is accordingly of interest to visit one of the Northwest's important producers of chlorine, caustic soda, etc., the Tacoma Electrochemical Co. This company, a subsidiary of the Pennsylvania Salt Manufacturing Co., constructed a modern chemical plant at Tacoma, Wash., in 1929 and since that time has efficiently served numerous industries with their particular chemical requirements.

The plant is located on a 40-acre site on the Hylebos Waterway and is constructed of concrete, steel and tile, for permanency and fire protection. Adequate rail and water facilities permit receipt of raw materials and shipment of finished products economically and with dispatch.

Basic Material Is Salt

The basic raw material is common salt, which is produced by solar evaporation in the San Francisco Bay region, from whence it is transported by steamers in bulk of approximately 2,000 tons. The first step in the electrolytic process is the preparation of a saturated solution of sodium chloride, from which impurities such as calcium and magnesium salts, are removed. The purified brine is fed continuously by gravity to Gibbs cells, in which electrolysis takes place, producing chlorine gas, caustic soda and by-product hydrogen.

The moist chlorine gas is drawn from the top of the Gibbs cells through an acid-proof ceramic lime and passed through sulphuric acid dryers; the resulting anhydrous gas is liquefied by pressure at reduced temperature, obtained by a carbon-dioxide refrigeration system. From the liquefaction department the chlorine is passed to storage tanks, from which it is transferred by dry compressed air to 100 or 150 lb. steel cylinders, 1 ton containers or to tank cars.

The caustic soda drains from the bottom of the cells into a liquid meter which measures the volume produced and collects a composite control sample. This weak cell liquor, containing 10 per cent soda and 15 per cent undecomposed salt, is fed into a rapid vacuum circulating evaporator, where it is concentrated to 50 per cent NaOH (sodium hydroxide). Salt is separated by precipitation and after filtration it is returned to the brine purification process, while the caustic filtrate is sent back to the evaporators. The 50 per cent caustic liquor is further purified and either shipped in this form by tank car or transferred to the finishing department.

The concentrated caustic liquor is completely dehydrated in large open-faced cast-iron pots. After precipitation of iron and manganese the fused caustic is cooled to 50 deg. C. above solidification and pumped into steel drums of 700 lb. net capacity, or to a machine which produces flake caustic for packing in 400, 100 and 50 lb. drums.

Another product is a concentrated aqueous solution of sodium hypochlorite, marketed under the trade name "Chlor". It contains 16 per cent by weight of available chlorine and is produced in iron-free equipment by passing chlorine gas into a cooled solution of caustic soda. The finished sodium hypochlorite is shipped in 5-gallon earthenware jugs or 30-gallon rubber lined barrels.

Control for Purity

Careful chemical control is maintained throughout the entire process; the raw material is examined for impurities and the purity of the brine fed to the cells is carefully guarded. Caustic content of the cell effluent is determined and the continual withdrawing of impurities is watched during evaporation. In a similar manner, the purification and concentration of the chlorine gas leaving the cells are carefully followed by analyses. This strict laboratory supervision results in uniform products of high purity.

From the very outset safety has been stressed, resulting in a note-

Plant of the Tacoma Electrochemical Co.

worthy "no lost time" accident record. Machinery is guarded and employees are furnished with safety equipment in keeping with their respective jobs. Periodic meetings are held and the plant well circularized with safety publications.

Chlorine in the Paper Industry

Because liquid chlorine does not deteriorate or lose its strength, it is an important oxidizing agent . Its major use is for bleaching by pulp and paper mills and the textile industry also consumes large quantities for the same purpose. The new direct pulp-bleaching methods, using chlorine instead of the intermediate hypochlorite, have added to the importance of chlorine to the paper industry.

Caustic soda finds its way into many industries other than pulp and paper. Over 65 per cent of consumption is accounted for in petroleum refining, the manufacture of rayon, in the production of other chemicals and in soap making.

Sodium hypochlorite, produced by the recombination of caustic soda and chlorine, is used as a bleaching and disinfecting agent in laundries, food industries, municipal water departments, etc.

The Pennsylvania Salt Manufacturing Co. is a pioneer in the manufacture of heavy chemicals. The first caustic soda produced in the United States was made at their Natrona works in 1852, and the first tank car of liquid chlorine was shipped from their Wyandotte plant in 1909. They were the first to announce and organize a Northwestern chlorine-alkali plant to serve this rapidly developing section, particularly its pulp and paper industry. As a result of their foresight the Tacoma Electrochemical Co. today is an efficient plant with potentialities for future development to meet the needs of this region as its industries expand.

Forest Inquiry Rejects Yield Tax Idea

New Plan of Relief Suggested

Two plans for taxing the forests are recommended in a report recently completed by the Forest Taxation Inquiry, established by act of congress in 1924. The inquiry has been conducted by Dr. Fred Rogers Fairchild, of Yale University. The report rejects the yield tax plan so strongly advocated throughout the timbered states as a means of relieving the tax situation.

The inquiry concludes that the yield tax would prove very defective in practice. There is no way, the report states, of determining a rate for the yield tax which would be equitable to the forest owners and at the same time make the tax bear a proper relation to the property tax paid by other classes of the community, and the yield tax would be unduly severe upon old-growth forests being at present operated, and it might in time come to place an unduly severe burden upon the majority of the forests.

The inquiry reports adversely also upon the plan of exempting all immature timber from the property tax as is done in California. This plan it is claimed would give an undue advantage to forest properties.

Two plans are recommended. One is a novel device for counteracting those adverse effects of tax payment required in advance of the receipt of income which the property tax imposes upon deferred-income forests. This plan is called the "adjusted property tax". It permits a deduction from the assessed value of the timber each year. The deduction is based upon the normal expected increase in the value of the forests. An exception to this occurs in years when the receipt of income cancels the reduction. The inquiry believes it to be the most satisfactory device yet proposed for amending the property tax to make it suit all conditions of forest practice, by offering substantial relief from excessive taxation of virgin forests while they are being held as reserves for future use.

The other recommended plan is known as the "partial timber exemption". Under it a certain percentage of the value of the timber—at a uniform rate for the whole state as fixed in the law—would be exempt from taxation. This would apply to young-growth forests and, under certain circumstances or with certain limitations, to old-growth forests also. This plan would accomplish a rough adjustment of the property tax to the special circumstances of forestry, while necessitating only the minimum of change from the present tax system and requiring only an efficient administration of that system to make it effective. It is similar to a plan now in use in some of the cantons of Switzerland.

The inquiry reports adversely upon a number of devices which have found more or less favor among the forest tax reformers. It gives no support to fixed assessments of forest properties or to a specific tax in lieu of the regular property tax. The report insists that all tax laws should be of general application and compulsory, thus disapproving of the optional feature which the characterizes many existing yield tax laws. Strong disapproval is directed toward all attempts to make forest tax laws rigid and immune from amendment by future legislation through the expedient of making the law a contract between the state and the taxpayer. No faith is placed in any plan of taxation which makes the form or amount of tax depend upon the intention of the owner to practice forestry. Facts, rather than intentions, are declared to be the proper measure of tax obligation.

The conclusions with reference to specific methods of taxing forests are by no means to be taken as covering the entire field of forest taxation. The investigations of the inquiry have made it clear that forest lands are suffering tax disabilities that are common to rural real estate in general.

The remedies proposed are rather fundamental in character, and it is not anticipated that they can be put into effect all at once, but even when these questions are disposed of there are certain inequalities in tax burdens that weigh heavily on certain kinds of forest property even under a perfectly administered property tax in a properly organized rural community. It is the methods of avoiding these inherent inequalities by specific plans of forest taxation that are presented in the present progress report. For a broad treatment of the entire problems and the evidence upon which the conclusions are based, it will be necessary to await the publication of the formal report.

NEW VANCOUVER PLANT

Contract has been let for construction of a new plant in Vancouver, B. C., for the Bartram Paper Products Co., headed by C. M. Bartram, Sr.

The new structure will be two stories in height, 66 feet wide and 160 feet long, of reinforced concrete, with all modern lighting improvements. It will be located at Franklyn St. and Woodland Drive.

CELLULOSE VISCOSITY and Its Use in Mill Control*

By N. W. COSTER[1]

In order to determine the viscosity of a material it is necessary to bring it into solution, or rather, the term viscosity is only applicable to solutions or liquids.

It is a well known fact that cellulose can be directly dissolved in a suitable solution of copper and ammonia. The viscosity of the resulting solution has been considered as as indicator of the comparative viscosity, which may be expected from the same cellulose in other solutions that are more difficult to prepare. Consequently this solvent in one or another concentration is now considered the standard one and all viscosity determinations mentioned in this article were made in cupro-ammonium solution containing 3% copper and 16.5% ammonia. The cellulose concentration was at all times 2.5% and the method employed has been a slight modification of the one proposed by the American Chemical Society.(1)

Theory

Before going into a discussion of cellulose viscosity it may be fitting to mention with a few words what is meant with the term viscosity and what it really illustrates.

The viscosity of a solution is depending on the molecular structure and attraction of the fluid, and this is influenced by the concentration and size of the molecules. If we imagine two plane surfaces in a liquid, each one of unit area (1 sq. cm.) and 1 cm. apart, forming two opposite surfaces of a cube of liquid, it is evident that to keep these surfaces moving relatively to each other, each remaining in its own plane, will require more force in some cases than in others, all depending upon the concentration and size of the molecules. The inherent property of a liquid, which opposes this motion, is called its viscosity and is defined as the tangential force on a unit area of either of two horizontal planes at a unit distance apart, required to move one plane with unit velocity in reference to the other plane, the space being filled with the viscous substance.

The experimental measurements of viscosity are mostly done by movement of the liquid in a capillary tube. It is not easy to see at first how this movement realizes the theoretical idea of layers of liquid sliding over each other, but if we take as an illustration a rolled up tape measure and deform it by pushing the center out, we see how the movement of liquid in a cappilary tube may be regarded as being made up of series of concentrical layers moving relatively to each other, the velocity being zero at the circumference (where the liquid touches the tube) and greatest at the center.

Another method frequently employed depends upon the rate of fall of a sphere through a liquid, or rather the liquids internal resistance to this rate of fall and, of course, also in this case stands the same rule; the larger the size and the concentration of the molecules, is, the higher the viscosity will be.

Cellulose dissolved in cupro-ammonium is not a true viscous liquid but a colloid. Consequently it is not the size of the individual molecules, but the size of the strongly bound chains of molecules, the miscelles, that determine the viscosity of cellulose or rather instead of having, as in a true viscous liquid, each molecule surrounded by the solvent, we have, when dealing with cellulose, each miscelle surrounded by the solvent. As the cellulose is degraded during the process of manufacture, these miscelles are pulled apart and consequently getting smaller, before the molecule itself is attacked, which will result in a lowered viscosity.

Cellulose Viscosity Compared With Other Tests

However, the industry has other chemical tests that will determine the degree of fiber degradation that has taken place during the processing, like the alpha cellulose content and the copper number. It may therefore be not more than right to ask the question: Why burden us with more tests than we have? However, I will say, that the cellulose viscosity test is the only one test, that will exactly tell, what degree the degradation of the fiber has reached.

The alpha cellulose content will tell us the percentage of the miscelles that have reached such a stage of degradation that they are soluble in strong caustic soda, but it does not say anything about the miscelle size in the alpha cellulose. Consequently it is not necessary for a pulp with a high alpha cellulose content to have a high viscosity. As a matter of fact, the alpha cellulose content of a pulp may be increased while its viscosity has dropped which, for instance, takes place when a pulp is exposed to dilute alkali at high temperatures.

The copper number test has been advocated by many investigators as a true indication of the cellulose structure and also of its paper making qualities, and consequently should be a good tool in the hands of a mill's operating department for process control. However, at least as far as bleached pulps are concerned, it depends too much upon the alkalinity in the bleachers to be of real value. In other words, the same pulp, bleached exactly the same way except for alkalinity, will give a lower copper number the higher the alkalinity is, without any other appreciable difference as far as strength properties or viscosity is concerned.

Another reason viscosity tests are superior to alpha cellulose or copper number tests is that they are so much more sensitive to changes in cellulose structure. A decrease in the alpha content of one unit and an increase in copper number of one unit very often results in a severe loss in strength which will also be shown by a tremendous decrease in viscosity. According to Kress (2) a pulp of high viscosity recooked in sulphite liquor will result in a product without practically any strength. In this case the viscosity was lowered 46.68 units while the alpha content decreased only 6.4 units and the copper number increased 1.78 units.

These facts, I believe, talk for themselves in supporting my previ-

*Presented at the Spring Meeting of Pacific Coast Section of TAPPI, Longview, Wash., May 5 and 6, 1933.

[1]Chemist, Puget Sound Pulp & Timber Co., Everett, Wash.

ous statement that the viscosity test is far superior to either alpha cellulose content or copper number.

When interpreting viscosity figures it is very essential to have in mind the kind of raw material used and the treatment given it. It is therefore, to my mind, impossible to say that because a cellulose product has a certain viscosity, it has certain other qualities. This is plainly shown in table I. However, we can always be sure that if we have a fiber with high viscosity, we also have fiber of excellent physical qualities. Quite a few investigators claim that there is a straight line relation between the tendering of the fiber or loss of strength during manufacture and decrease in viscosity. The viscosity test is so sensitive to changes in cellulose structure that this change is not reflected in the physical tests. This primarily because our present methods for determining the physical constants are not accurate enough. Therefore, if a mill makes one or several grades of pulps, it should always aim to get the highest viscosity possible for the particular grade, even if the increase in viscosity does not show up any in strength properties developed in a laboratory test.

TABLE I

Sample	Mullen	Tear	Fold	Freeness	Alpha	Cu.No.	Viscosity
A	104	----	-----	570	92.5	0.20	48.99 CGS.
B	116	222	7700	585	88.5	1.11	56.05 "
C	95	297	4650	310	87.2	2.40	40.40 "
D	87	159	3740	500	85.7	3.31	10.10 "
E	99	265	4710	420	85.6	2.43	25.24 "
F	69	105	508	235	88.8	0.73	10.10 "

Factors Influencing the Viscosity of Cellulose

As mentioned before, the raw material from which a paper making fiber is made has a great influence on the finished product's viscosity. So will for instance rags, after they are made suitable for paper making, have lots higher viscosity than the best bleached pulps available.

Another factor, that, at least as far as the wood pulp industry is concerned, has an influence upon the resulting viscosity, is the density of the wood. The higher the wood density is, the easier it is to produce a pulp with high viscosity. The exact reason for this seems to be rather hard to find, but it seems to me as if in a slow growing tree of high density the fibers are so close together that they are easier to protect from tendering during the stage of manufacture than in a fast growing tree where they are more separate.

The three factors that change the viscosity of a cellulose material during processing are cooking, bleaching and drying. The latter, however, only if it is done to extreme so that we get close to the absolute bone dry content which is never done in the industry and therefore can be left out.

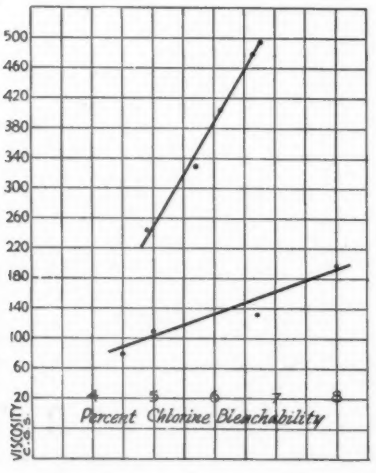

Figure 1. Relation between Viscosity and Bleachability in two different methods of cooking sulphite pulp.

Cooking

The viscosity of an unbleached pulp must always be interpreted carefully, as it has not yet been found exactly what influence the lignin content has on the viscosity. However, we know now, that as the lignin is removed from the cellulose during the cooking, the viscosity is lowered. It is therefore very probable that the lignin and related impurities greatly affect the colloidal dispersion of the cellulose in the cupra-ammonium solution and act as some kind of a binder or glue between the miscelles, giving us values absolutely misleading if we compare them with those obtained on bleached pulps. However, I do say, that a viscosity test is of a value in evaluating unbleached pulps in a mill, where uniform cooking conditions can be obtained. In fig. I are two curves representing the relation between the chlorine bleachability and the viscosity, each curve representing two different cooking conditions, while in each separate case the cooking was done as uniformly as is humanly possible. There was not found any relation between the mullen on one side and the viscosity and bleachability on the other, at least not within reasonable limits of bleachability. However, it may be said that a pulp of a certain bleachability will lose strength in bleaching, the higher its viscosity is, which is self explanatory, if we take into consideration the previous mentioned relation between tendering of the fiber and viscosity. It is impossible to say what variable in the cooking affects the viscosity the most, but from my own experience I would say that the temperature seems to me the most important, or maybe rather the correct relation between temperature and time.

Bleaching

Regarding the factors in bleaching that influence the viscosity, we may say that every possible factor

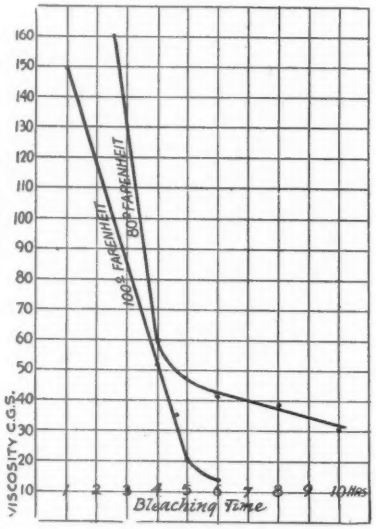

Figure 2. Relation between Temperature Viscosity and Bleaching Time in one-stage bleaching (5% Density).

thought of will do so. However, the bleaching is so much easier to control than the cooking, so if we know the viscosity of the unbleached pulp, we can obtain a bleached product with practically any desired viscosity, if we only arrange our bleaching procedure accordingly.

Bialkowsky (3) has shown the influence the bleaching process has on the viscosity of rags and Parson (4) has shown how the viscosity gradually decreases during two stage bleaching of sulphite pulp, also its relation in this particular case to other chemical and physical properties, and how, when dealing with a

purified pulp, a decrease in viscosity was followed by a decrease in strength. Yorston (5) has shown that a pulp bleached in two stages will have a higher viscosity than if bleached in one stage, also that a one stage alkaline bleaching gives higher viscosity than a one stage acid or neutral bleaching, but that a one stage alkaline bleaching does not give any higher viscosity than a two stage neutral bleaching.

In fig. II is shown the influence of temperature upon the viscosity during a one stage bleaching process using a density of 5% air dry pulp. We see that even if at a higher temperature the bleaching time is shorter the final product's viscosity is only about 50% of the one obtained at the lower temperature. If the same experiment had been carried out in a high density bleacher, the difference would have been much greater. The same amount of bleach liquor was used in both cases and the pulp was bleached to the same color.

Another factor that seems to have quite an influence upon the viscosity of the fully bleached pulp, and which may be of special interest to Pacific Coast mills, is the ratio between the amount of chlorine used in the first and second stage. This ratio does not seem to affect very much the physical qualities that were obtained in a laboratory beater nor the copper number or alpha content of the different pulps, but it certainly had a great effect upon the viscosity of the resulting product.

In order to determine this effect the same pulp was bleached using different ratios, but at the same temperature and consistency in all cases and to the same final color. The bleaching time in the first stage varied slightly with the amount of chlorine consumed but was approximately the same in the second stage. The more important data relating to these experiments are found in table II and fig. III. We see here, for instance, how a change in chlorine ratio from 1/1 to 3/1 raised the viscosity at the rate of 2/1.

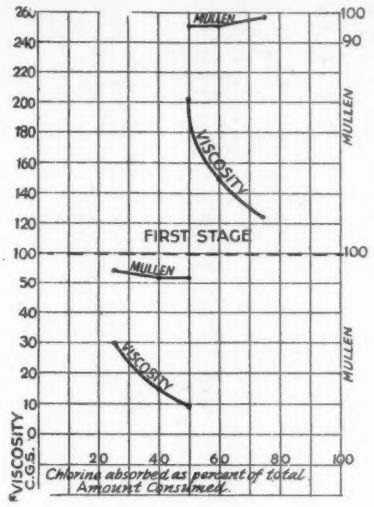

Figure 3. Relation between Viscosity, Mullen and Chlorine ratio in two-stage bleaching.

Summary

Much more could be said about the use of cellulose viscosity in mill control, but it is a problem that has to be worked out by each individual mill separately, and this is only intended as an outline of what it, in a few particular cases, can tell an operating department. In conclusion I will repeat:

First—Cellulose viscosity tests are superior to any other chemical test, when it comes to estimating the degradation of a fibrous material.

Second—Cellulose viscosity tests are so sensitive that they will tell about the weakening of a fiber, long before this can be noticed in a laboratory strength test.

Third—A mill, when grading it's pulp, should in my opinion not only use physical tests, but also cellulose viscosity tests and would in this way, after once having established it's standards, be able to furnish the most uniform pulp possible for different grades.

However, this very good test has one great disadvantage, and that is it takes so long a time to carry it out, that much damage can be done, before the result can be brought to the operating departments attention. It is therefore my sincere hope that some of our universities or other well equipped research laboratories will soon give us a reliable method for determining cellulose viscosity, just as fast as we now can make a beater test.

References:
1. Ind. & Eng. Chem. Vol. 1, No. 1, 1929.
2. Paper Trade Journal, Dec. 3, 1931.
3. TAPPI papers 1930.
4. TAPPI papers 1931.
5. Canadian Forest Products Laboratory of Canada quarterly report June, 1931.

TABLE II

First Stage:	Chlorine used	50%	60%	75%
	Temperature	70°F	70°F	70°F
	Consistency	3.80%	3.83%	3.75%
	Bleaching Time	1¼ hr.	1¼ hr.	1½ hr.
	Viscosity	202	150	125
	Mullen	96	96	99
	Freeness	440	450	400
Second Stage:	Chlorine Used	50%	40%	25%
	Temperature	78°F	78°F	78°F
	Consistency	14.7%	14.0%	14.2%
	Bleaching Time	2 hrs.	2¼ hrs.	2½ hrs.
	Viscosity	19	30	42
	Mullen	92	92	94
	Freeness	430	420	500

EASTERN VISITORS AT HOQUIAM

William F. Bromley and William T. Brust of Erie, Pa., visited the Grays Harbor Pulp & Paper Co. at Hoquiam, Wash., late in June on a combined business and pleasure trip.

POST TRANSFERRED TO FRISCO

E. H. Post, secretary of the Camas plant of the Crown Willamette Paper Co., has been transferred to the comptroller's office at San Francisco. Mr. Post was in the San Francisco office for three years before coming to Camas in 1920.

Paul F. Middlebrook has succeeded him at Camas, coming from Oregon City. This is the fourth time he has been connected with the Camas mill, having started his paper career here. He has been with the company since 1912; in 1921 he was office manager at Camas and in 1925 mill secretary.

KELLY GOES EAST

Norman Kelly, assistant superintendent of the pulp division, Weyerhaeuser Timber Co., left for the East early in June. He planned to spend several weeks with H. F. Bigelow and G. S. Brazeau of the sales department, calling on buyers of Weyerhaeuser pulp and discussing production problems. He was accompanied by Mrs. Kelly and both will attend the Century of Progress in Chicago.

PILZ RETURNS FROM CHICAGO TRADE MEETING

W. J. Pilz, of the Everett Pulp & Paper Co., recently returned to Everett after an eastern trip during which he attended a conference of paper makers in Chicago having to do with plans for organization under the Industrial Recovery Act. William Howarth, president of the company, also attended some of the Chicago meetings.

Mr. Pilz' trip covered seven weeks, and took him as far east as New York and as far south as Los Angeles.

American Chemical Industry Fights Foreign Domination

Analogy to problem of pulp and paper industry provided by struggle of Allied Chemical & Dye Corp. against foreign interference

The similarity between the problems of the chemical industry and the pulp and paper industry of the United States continues to manifest itself, particularly with respect of the efforts of internationalists and foreign producers to control the industry and market in this country. The actions of the chemical industry in combatting these influences are worthy of the consideration of pulp and paper producers, in view of the control of dominant American pulp and paper interests by international bankers and financiers.

Orlando Weber was influential in creating and building up the American chemical industry against powerful foreign combinations. Recently subjected to the attacks of these foreign producers seeking to wrest from him control of the Allied Chemical & Dye Corp., he has replied to them in forceful manner, through a message to his stockholders. He tells of measures taken by these foreign interests well worth the thoughtful consideration of people in the pulp and paper industry.

In his message, Orlando Weber says:

"We wrote to you on June 6, 1933, that we would at an early date issue a statement of the utmost importance. Accordingly, we now present to you the facts upon which you will be able to base your judgment and to take such action as you may consider necessary in view of the issue with which your Company is confronted. That issue, vital to your Company, to the American chemical industry and to the people of the United States, is whether you will permit the domination of your Company by powerful foreign chemical interests, with which your Company is today competing in the markets of the world, or whether you will support the management of your Company in maintaining the American chemical industry for American capital and American labor.

"In an endeavor to induce stockholders to assist them in the furtherance of their own plans, a self-appointed Committee purporting to represent stockholders has attempted to utilize the publicity which has arisen in regard to the discussions which the Company has had with the New York Stock Exchange. The discussions with the Exchange have related to the request by the Exchange that the Company make public further details concerning its operations which, if published, the management has believed would be beneficial to competitors and therefore detrimental to the interests of stockholders. . . .

"While 80 per cent of your Company's common stock is owned by American stockholders, the remaining 20 per cent is owned by Solvay & Cie. of Belgium, one of the most powerful chemical companies in the world. This is the principal holding which the Committee represents. Most of this stock is registered in the name of Solvay American Investment Corporation, a subsidiary of Solvay & Cie. of Belgium, and in the names of private bankers in escrow and was used as collateral and otherwise to obtain from American investors $40,000,000 largely for the purpose of building European chemical plants which compete with your Company in the markets of the world. Solvay & Cie. of Belgium retained control of the voting rights. The balance of the stock controlled by Solvay & Cie. is registered in the name of Mutuelle Solvay of America, Inc., another American subsidiary.

"Solvay & Cie. is closely associated with and has a substantial interest in I. G. Farbenindustrie, the great government-subsidized chemical trust of Germany. Solvay & Cie. is also associated with and is represented on the Board of Directors of Imperial Chemical Industries, Ltd., the government-subsidized British chemical trust. Both the German I. G. Farbenindustrie and the British Imperial Chemical Industries, Ltd., are leading factors in the international cartels which have sought and now seek to dominate the world trade in nitrogen, dyestuffs and other chemicals. Solvay & Cie., directly and through its European ramifications, has sought and now seeks to dominate the world's alkali market. It is from these European organizations that Allied Chemical & Dye Corporation and other American chemical companies wrested the American market. The American chemical industry is today fighting to maintain that market for American capital and American labor against the organized, combined and ruthless attacks of foreign competition."

The letter goes on to point out that they were formerly allied by a "community of interest" agreement with these foreign companies whereby technical information relating to the production of alkali was exchanged. It became apparent that these agreements were chiefly of advantage to these foreign companies, and the agreements were cancelled. It was also apparent that foreign directors on the board were seeking information for use by their own foreign organizations, and that they desired to entangle the company in foreign alliances, contrary to law and opposed to commercial considerations.

The statement continues:

"On January 10, 1927, Dr. Wm. H. Nichols, dean of the American chemical industry, founder of Allied Chemical & Dye Corporation and Chairman of your Board, wrote to Mr. Armand Solvay, head of Solvay & Cie., as follows:

" 'I perhaps cannot too strongly stress the fact that in the part I played in the formation of the "Allied" company, I had in the forefront of my mind the establishment of a great American chemical industry which should make the country independent in case of war and add to its prosperity in times of peace, as well as to be reasonably profitable to its stockholders. That these objects have been and are being measurably attained—that the Company has had uncommonly able management—does not admit of a doubt. Eighty per cent. (80%) of its stockholders are Americans who have no chemical interests in conflict with their Allied interests. . . .

" 'As an important American institution, its control must be kept in America—and without chance of foreign entanglements or foreign dictation. Otherwise the best results for all will be impossible. . . .

" 'Remembering some of my former experiences with others, I may frankly say that your large interests in the German cartels, in the great new English merger, and in other

chemical companies in other lands, coupled with your evident desire for a world consortium that would give all the world's trade, outside America, to others than the Allied—all this does give us considerable anxiety. We are led to feel that perhaps you regard these other interests as more important to you than this Company, which to us is all important.

" 'The effect of a consortium would certainly be to hobble this Company in the interest of the huge German cartel and of the new British monopoly. For this Company to bind itself by consortiums not to sell in markets where prices are advantageous would be not only to violate American law but to violate its duty to its stockholders, eighty per cent of whom could not be compensated by any outside advantages.' "

All representation of foreign interests has been eliminated from the Board of Directors, the report says, this being one of the causes instigating the present foreign attack. Mr. Weber takes the opportunity to report the company's financial position, and points out that prior to the War we were dependent on foreign sources for necessary chemicals; that today the United States is self-sufficient in chemicals and dyestuffs.

Weber is the type of man needed by the pulp and paper industry for the protection of their interests. Fortunately we have several of his kind, but their efforts should have greater support from the domestic industry and from the federal government.

Contrast what he has done to correct the situation in the chemical industry, with the situation created by the banker-owners of large United States paper interests. These bankers, because of foreign investments, have endeavored in every way possible to throttle the development of pulp and paper manufacturing in the United States. Their influence has extended to some of the highest officials of the federal government, including particularly Ogden L. Mills, until recently Secretary of the Treasury. Some plain speaking concerning them is perhaps in order, just as Weber has brought the attack of foreign interests into the open.

Polson Advocates Pulp Tariff to Help Employment and Forest Utilization

Alex Polson, prominent Washington lumber leader and pioneer, recently pointed out that the block of timber between Grays Harbor and the Columbia River would support seven to twelve pulp mills indefinitely, and advocated correction in our money and a tariff that would make this expansion possible.

Because of his long experience and his intimate knowledge of the timber industries, Mr. Polson's views are of particular interest. His letter, first published in the Aberdeen World, is reprinted below.

"It isn't so very long ago that I was severely condemned for being the means of bringing a pulp and paper plant to Grays Harbor, with the help of our friend, Mark E. Reed. Mr. Reed has come to the aid of our county by paying $40,000 taxes, and this plant which he was the means of helping us build in Hoquiam has paid $35,000.

"The pulp plant has done more than anything else during this terrible depression to give work to those who sorely needed it.

"Except for the man I have mentioned, there would have been another pulp plant in Aberdeen, and Aberdeen would not be paying $50,000 a year interest on bonds, but would have a pulp plant there, and it also would be running, in all probability, and the sawmill which was built to furnish chips and fuel would be going too. There is no pulp plant in Aberdeen and the mill has been idle most of the time and probably will be idle until a pulp plant is built.

"Speaking of public railroads in the peninsula, the Northern Pacific runs to the Pacifific ocean, right down through the peninsula, and any logger or lumberman who is desirous of disposing of his timber can build a branch road connecting with the Northern Pacific. Any informed person knows that any common carrier like the Northern Pacific or the Milwaukee cannot be a logging road. Its Y's would be too expensive to permit it to put in logging roads. Read the American law regarding public carriers.

"The people who had the capital to build the pulp plant said that capital never invested where it was not welcome, and so the pulp plant designed for Aberdeen was built at Port Angeles.

"I know the principal forests of the United States, and I don't know of another block of timber fit for pulpwood, like that extending from Grays Harbor to the Columbia river, which would keep from seven to a dozen pulp mills running continuously for all time if fire were kept out and the ground was allowed to reseed itself. Our western hemlock is a wonderful pulpwood and it is also the best timber for ladder stock that grows on the American continent. A tree twelve inches at the butt, in a grove, will be 125 to 150 feet tall, and some trees 175 feet.

"But this forest is not being used, for lack of a correction in our money and a tariff that will protect us for our own markets. Our own markets would take nearly all that the seven to twelve plants could produce if we had the proper tariff protection. Every fifty years this timber would reproduce itself for a new crop, which would make the pulp industry continuous.

"It was only a few months ago that a large vessel from Newfoundland brought a load of paper to the coast and sold the bulk of it in Seattle and Tacoma, while our honest-to-God laboring men and women would have been only too glad of a chance to earn their living at home here. I have nothing but the kindest of feelings for the citizens of the provinces of Canada, but the homeland should have our first consideration.

"Let us protect our homes, not only with a protective tariff and a new money arrangement, but let us have a very reasonable tax on new industries which give employment to labor, until they are well established and amply able to pay taxes.

"A home costing $1,000 to $2,000 in Australia is free from taxes for several years after being built. Let us give some encouragement, too. The house pays no tax if it isn't built. If it is built it employs labor and enables those who furnish the materials to pay a larger tax. Let us have a little vision and not believe a falsehood which is criminal and hurtful to us all.

ALEX POLSON."

NEW IDEAS IN PAPER MAKING
Recent U. S. Patents

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1,908,862. Method of Reclaiming Waste Sulphite Liquor. Charles H. Reese, Erie, Pa., assignor to Hammermill Paper Co., Erie, Pa. The method of preparing for use the waste liquor of the sulphite process of paper making which comprises adding lime to the liquor to neutralize the acid thereof, adding a gelatinous material to coagulate the precipitate, heating the liquor to approximately 200 degrees F., and separating the liquor from the precipitate to produce a clear liquor for subsequent use.

1,906,102. Method of Alkalizing the Waste Liquors from the Soda or Sulphate Pulp Manufacture for the Purpose of Making Them Suitable for Dry Distillation. Erik Ludvig Rinman, Djursholm, Sweden. The method of alkalizing waste liquors from the soda pulp manufacture for the purpose of making them suitable for dry distillation, which comprises concentrating the waste liquor to hold about 50% dry substance, and alkalizing said concentrated waste liquor while hot by adding to and intimately mixing with the same barium oxide in a pulverized state so as to cause a reaction which generates sufficient heat to drive off the major portion of the water so that a pulverulent mass ready to be dry distilled is obtained.

1,904,170. Cyclic Process for the Production of Sulphite Pulp. Geo. A. Richter, Berlin, N. H., assignor to Brown Company, Berlin, N. H., a corporation of Maine. A cyclic process which comprises cooking raw cellulosic material in a sulphuric acid solution of alkali sulphite, smelting the inorganic content of the spent cooking liquor in a reducing atmosphere to produce alkali sulphide and alkali carbonate, dissolving the smelted compounds in water, carbonating the solution to convert the alkali sulphide into alkali carbonate, treating the carbonated solution with a water-soluble oxidizing agent to oxidize such residual alkali sulphide as may be present therein to an oxygen-containing salt of the nature of alkali sulphite and alkali sulphate, and acidulating the resulting solution with sulphur dioxide to form a fresh liquor for repeating the cooking step of the cycle.

1,910,613. Preliminary Boiling or Cooking Process For Cellulose. Karl Yrjo Kylander, Helsingfors, Finland. The process comprising saturating cellulosic material with a liquid containing at least one substance selected from the group comprising acetic acid, natron lye, acetates, and phosphates, and then boiling the material without previous washing in a bisulphite digesting liquor at a temperature materially higher than 130 degrees C., and a pressure of materially higher than 4 to 6 atmospheres.

1,908,193. Cellulosic Material and Process of Producing the Same. Fernando Somoza Vivas, Pelham Manor, New York, N. Y. The process of producing cellulose fibre material which comprises beating a pulp of cellulose fibres in a solution of substantially the indicated proportions of the following compounds; namely:

$MgCl_2$	12 oz.
$MgSO_4$	12 oz.
$NaHCO_3$	12 oz.
NaB_4O_7	2 oz.
NaCl	2 oz.
Water	1 gal.

and shaping and drying the pulp in the desired form.

1,905,749. Manufacture of Artificial Leather. George A. Richter, Wallace B. Van Arsdel and Roger B. Hill, Berlin, N. H., assignors to Brown Company, Berlin, N. H., a Corporation of Maine. Sheet material comprising a porous foundation of loosely felted cellulose fiber, the pores of which contain rubber and bakelite varnish.

A process which comprises impregnating a porous foundation of interfelted cellulose fiber with an aqueous dispersion of rubber, drying said foundation, impregnating with a solution of bakelite varnish, removing the solvent, and curing at elevated temperature.

1,905,161. Method of an Apparatus for Hydrating Cellulose Pulp. William T. Doyle, Dorchester, Mass., assignor to Sturtevant Mill Company, Boston, Mass., a Corporation of Massachusetts. A cyclic method of hydrating cellulose pulp stock for papermaking or the like, which comprises preparing and maintaining a supply of such stock as a thick aqueous suspension, progressively removing stock from said supply and feeding it into a casing having an outlet through which the water of said suspension may freely flow but designed to permit the accumulation of stock in said casing, subjecting the stock in said casing to a swift succession of hammering impacts under conditions to discharge forcefully only a portion of said stock through said openings, returning the discharged stock to said supply, and repeating the cycle until the degree of hydration desired for papermaking has been produced in the stock.

1,904,235. Method of Improving Cellulose Raw Material of all Kinds. Valentin Hottenroth, Mannheim, and Otto Faust, Mannheim-Neuostheim, Germany, assignors to Zellstofffabrik Waldhof, Mannheim-Waldhof, Germany. The process for improving bleached sulphite cellulose consisting in immersing 100 kgs. of the air-dried sulphite cellulose in 300 litres of 12% soda lye for 2 hours, in pressing off until the material weighs about 100 kgs., in separating the material in fibres and ripening for 5 days at 25 degrees C., and in washing, acidifying and neutralizing the material, as set forth.

PAPER INSTITUTE GRADUATES RECEIVE DEGREES

Four graduates of the Institute of Paper Chemistry have been granted the first Doctor of Philosophy degrees in the history of Lawrence College. The degrees were conferred at the eighty-third annual commencement exercises at Lawrence on Monday, June 12, by Dr. Henry M. Wriston, president of the college and director of the Institute.

The candidates were presented by Dr. Harry F. Lewis, dean of the institute, and they were invested with their hoods by Dr. Otto Kress, technical director.

Those who received the degree are: Harold William Bialkowsky, Holyoke, Mass.; Roy Liston Davis, Athens, Maine; Edwin Laughlin, Delaware, Ohio; and Edward H. Voigtman, Sheboygan, Wisconsin. Sixteen men were enrolled originally in the class to which these four belonged.

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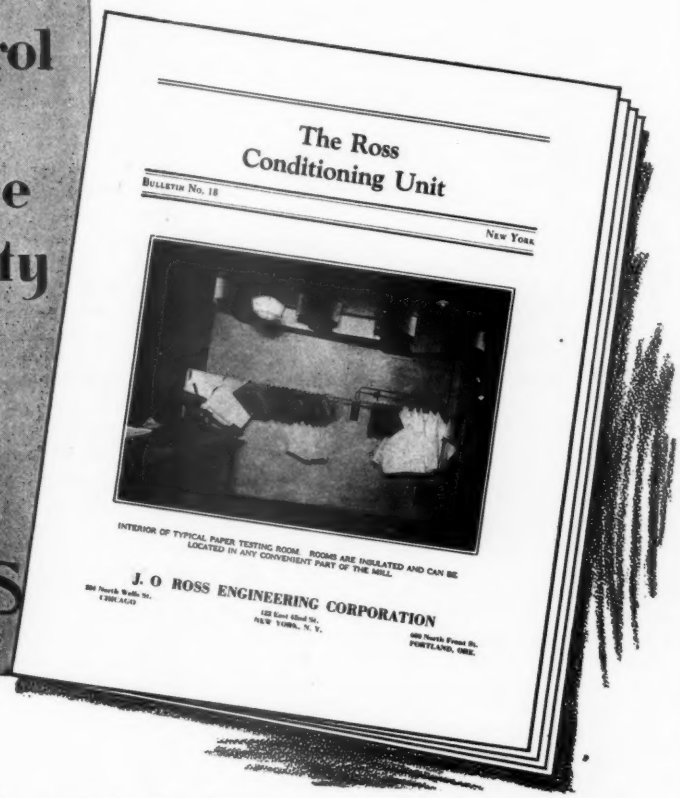
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The Ross Conditioning System has been developed to insure uniform conditions for paper testing, regardless of the fluctuations of outside temperature and humidity. Economical to install and maintain, simple to operate, this automatically controlled system now permits the average mill to secure accurate uniform testing to meet the definite test standards that purchasers are demanding.

THIS NEW BULLETIN SENT ON REQUEST

Illustrated with photographs and charts, explaining purpose of the system and describing the equipment. Write for copy.

Equipment is furnished in several sizes for various sizes of test rooms and is of the reliable Ross quality. We invite inquiries from any mill considering the installation of a testing laboratory.

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201 North Wells Street, CHICAGO — **Main Office—122 E. 42nd Street, NEW YORK** — **600 North Front Street, PORTLAND, ORE.**

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NEW BIRKS BLDG., MONTREAL

ROSS SYSTEMS
HEATING—VENTILATING—DRYING

When writing to J. O. ROSS ENGR. CORP. *please mention* PACIFIC PULP & PAPER INDUSTRY

PAUL HERB GOES SOUTH

Paul Herb, vice president of the Pacific Coast Paper Mills, Bellingham, was in Los Angeles early in June looking after their business, which is large in volume in that territory.

It is reported that production at the plant will be increased by about 20% in the near future, through improvements which will speed up the machines. The mill is operating full time at present, a reflection both of improved conditions, and the extensive and intelligent sales and advertising campaign they have carried on in the last year.

McBAIN AT GREEN BAY

B. T. McBain left Portland Ju 3 to attend the national convention of superintendents at Green Bay, Wisconsin, and then visit New York. Mr. McBain, who keeps a close watch on conditions in the paper industry, said that there had been a definite upturn.

A. H. COCHRAN REPRESENTS DILL & COLLINS ON COAST

Andrew H. Cochran, San Francisco, well-known Pacific Coast paper man, has been named western mill representative for Dill & Collins, Philadelphia, manufacturers of high grade coated papers. Mr. Cochran formerly was with the Cascade Paper Co. of Tacoma and later was on the sales staff of Bonestell & Co., San Francisco paper jobbers. It is believed Mr. Cochran will open his office in San Francisco, probably at No. 7 Front St.

Grellett Collins of the Philadelphia firm made a trip to the coast in May to make the appointment.

OREGON PULP INCREASES WORKING SCHEDULE

All four machines at the Salem plant of the Oregon Pulp & Paper Co. were working 24 hours a day early in June, and increasing orders made it likely operation seven days a week would be necessary. Prices on bond paper have strengthened, and orders on this grade have been heavier, it is reported.

JAPAN'S PULP IMPORTS

Japanese imports of chemical pulp during the month of March, 1933, were as follows (amounts stated in pounds): Canada, 17,555,200; U. S. A., 7,448,667; Norway, 12,043,733; Sweden, 8,770,400; Germany, 133; Czecho Slovakia, 330,933; France, 121,334; Europe, 3,728,667; total, 49,999,067.

CROWN WILLAMETTE DIVIDEND

A dividend of $1 a share on the $7 cumulative first preferred stock has been declared by the directors of the Crown Willamette Paper Co. The dividend is payable July 1 to record of June 13.

A similar dividend was paid the preceding quarter but the shares are in arrears $6.75.

PORTLAND IMPROVES

A most optimistic spirit prevails among the paper manufacturers and jobbers in the Portland territory, due not only to the evident pickup in business and the immediate increase in prices, but also to the prospects for improvement foreseen in the application of the national industrial recovery act. Generally there seems to be little apprehension about the effect of the measure and a feeling exists that it will result in business being placed on a profitable basis.

R. L. Galloway, manager of the Western Paper Converting Co., Salem, reports that present orders exceed not only in volume of business but in value those at any period during the past six or eight years, and prices are about 40% under the pre-depression level. This firm has recently brought out a complete tablet line from rough school tablets to fine linen-finish writing pads. Already orders have been received for 15 carloads of this new line, says Mr. Galloway.

Edward C. Brogren, branch manager, Western Waxed Paper Co., reports a slight upturn with April and May showing an improvement over March. He expects a considerably greater improvement.

C. L. Shorno, vice president, Blake, Moffitt & Towne, reports business much better than it has been and prices advancing.

Alec C. Duncan, local manager, Paper Makers Chemical Corporation, finds business improving generally with practically all the mills busier. "I don't know of one that's slipping," he says. He expects that some of the pulp mills that have been shut down may soon be running again.

The Leadbetter mills at Salem and Vancouver are reported to be operating full. Hawley Pulp & Paper Co. has experienced some improvement. Camas and Oregon City are said to be busier.

Vernon Scott, president, Packer-Scott Co., says that April and May business was good and that future orders June 1 were better than at any time in the past two years.

CANADIAN INTERNATIONAL 1932 ANNUAL REPORT

Canadian International Paper Co. and subsidiary companies report that consolidated net earnings, before interest and reserves, for 1932, was $3,649,798, which was slightly less than interest requirements on the first mortgage bonds of the company and prior liens, including obligations of subsidiaries. After all charges the company in 1932 had a consolidated net loss of $4,694,522.

During the year funded debt was reduced by $3,486,098, bank debt by $1,616,625, and other current liabilities by $678,915, a total of $5,781,-638. Against this there was an increase of $2,646,437 in indebtedness to affiliated companies, and a reduction of $6,965,632 in current assets. At December 31, 1932, current assets totaled $22,001,320, compared to $5,422,620 of current liabilities, a ratio of more than four to one.

Production of the mills now controlled by the company totaled 493,-433 tons of newsprint and 119,251 tons of sulphite pulp in 1932, compared to 644,841 tons of newsprint and 131,099 tons of bleached sulphite pulp in 1931. In addition to this reduced volume there were heavy declines in prices both for newsprint and for sulphite pulp. The effect of these adverse factors was offset in part by marked improvement in operating efficiency, by lower salaries and wages, and by reductions in administrative costs.

All these figures include New Brunswick International Paper Co. and International Power and Paper Co. of Newfoundland, Limited.

Consolidated profit and loss statement for year ended December 31, 1932, is as follows:

Gross sales	$30,227,722
Less: Cost of sales and expenses, less other income and profit on exchange	26,864,478
	$ 3,363,244
Add: Profit on bonds and debs. redeemed	286,554
Net revenue, including other income	$ 3,649,798
Less: Int. on sub. cos. obligations	2,232,239
Int. on Can. Int. Paper Co. first mort. bonds and prior liens	1,495,932
Other int., amort. of disc., etc.	2,236,630
Depreciation and depletion	2,379,519
Net loss	$ 4,694,522

SITKA SPRUCE PLANT TO BE SOLD JULY 25

R. T. Bourns, receiver for the Sitka Spruce Pulp and Paper Co., Empire, Ore., has been authorized by the court to sell the properties of the company July 25 to satisfy judgments totalling $710,259.64 against the mill and holdings of the company. Total liabilities of the firm are reported to be $850,000.

Former employees of the company won a victory recently when the circuit court held that the labor liens were a first obligation and must be paid before other indebtedness. It is anticipated that at least part of the labor liens totalling $9,000 will be paid soon.

PAPER BOX MAKERS MEET

Members of the Pacific Coast Paper Box Manufacturers Association assembled at the Hotel Gearhart, Gearhart, Ore., for a three-day convention, June 26, 27 and 28. Members of the association came from widely separated coast points.

Business sessions were held Monday, Tuesday and Wednesday mornings of the meet. On Monday afternoon, June 26, a tea was held for the ladies at Bywater and on Tuesday afternoon, June 27, the ladies were entertained at a bridge tea at the Hotel Gearhart. The men held a golf tournament on Monday and Tuesday afternoons. Wednesday was devoted to finishing up the golf tournament and a picnic.

Clarence B. Kerr, Hollywood, Cal., was president of the association and Hugh Peat, San Francisco, is general secretary. Approximately 100 members of the association attended the convention.

J. L. Norie, Seattle, was elected the new president of the association. Al Stein, Los Angeles, was named vice-president; C. A. Morgan, Portland, secretary; C. B. Kerr, Los Angeles, and W. H. Thomas, San Francisco, executive officers.

BAMBOO SUGGESTED TO REPLACE CONIFEROUS WOOD FOR PULP

When and if coniferous forests of the world fail to meet the draining demand for cellulose and paper requirements—and forest research shows that failure is certain—man may turn to bamboo as a raw material to replace vanished conifers.

Such was the suggestion contained in a paper by Mr. M. P. Bhargava of the Imperial Forest Research Institute, Dehra Dun, India, read before forest section of fifth Pacific Science Congress at Vancouver, B. C.

The Indian scientist said that sawmill, cellulose and paper requirements of the world are putting coniferous forest reserves of Europe and America to a heavy strain.

"It is predicted that these resources are likely to be depleted in about forty years' time, if their exploitation continues at the same rate as in the past," he wrote.

"The necessity for a raw material which will supplement wood pulp is keenly felt by the growing cellulose and paper industries, in order that existing coniferous resources may be preserved and exploited in perpetuum. Investigations carried out by the Institute at Dehra Dun have found in bamboo a material which promises to supply most of the needs of the paper and cellulose industries of the future.

"Almost inexhaustible supplies of bamboo are available in tropical and sub-tropical regions of the world, and it is found to be an excellent pulp and paper making material."

Jones Beater in Grays Harbor Pulp and Paper Co.

The JONES BEATER

assures Enduring Dependability and

Long-Term Economy

A few of the many new features:

1—Tub designed for rapid circulating, mixing, beating and emptying qualities.

2—Heavy tub construction with extreme wearing parts protected by metal.

3—Patented pin type roll—banded or bandless; easy to refill and giving utmost efficiency.

4—Heavy lighters giving accurate roll adjustment needed for efficient beating control.

5—Newly designed backfalls maintaining an exact distance between roll, bed plates and backfall.

6—Quick dumping device of either oblong or round valves, outside operated.

7—Backfall water device for quick dumping of beater.

8—Improved cylinder washer for either washing or thickening stock.

9—Many other beater refinements that mean better and quicker beating with long life and low maintenance.

It will pay you to learn more about the outstanding advantages of the Jones High-Speed Beater. Your inquiry is invited.

Pacific Coast Supply Co.

Seattle—Portland—San Francisco

Exclusive Pacific Coast Representative for the entire line of paper mill products made by

Jones

A name that has won a world-wide reputation through 75 years devoted to paper-making progress

S·A·F·E·T·Y

According to a recent report of the National Safety Council, Inc., the 1932 accident injury rates for the pulp and paper industry are about the same as for electric railways and woodworking plants, but the frequency rate is high in comparison with such important industries such as steel, chemical and rubber. Pulp and paper plants compare favorably in severity with the steel and chemical industries.

Fatalities are very important in the industry's severity rate, as shown by 1932 time charges of 168,000 days for fatalities, in comparison with about 51,000 days for permanent partial disabilities and 42,000 days for temporary disabilities.

Large paper and pulp mills have the best records in frequency but the small plants excel from the standpoint of severity. This is the situation in many industries. Accident rates for large mills are: frequency 20.87, severity 2.81; for small mills, frequency 28.11, severity 2.11.

An analysis of experience within the industry shows the worst records to be in pulp mills, with an average 30.86 for frequency and 4.57 for severity. Remanufacturing plants have the lowest frequency rate, 14.35, and the lowest severity rate, 1.06. There is considerable room for improvement in board mills, which averaged 30.61 in frequency and 2.11 in severity, against 17.25 and 1.82 for paper mills. In the latter group, newsprint mills have a high frequency rate of 26.00 and a high severity rate of 3.02, in contrast with low averages of 10.78 and 0.92 for mills manufacturing book papers and specialties.

The 1932 record of wrapping paper mills was not good; rates being 22.12 for frequency and 5.22 for severity.

PULP AND PAPER MILLS IN THE STATE OF WASHINGTON

Statement of Accident Experience for April, 1933

Company—	Hours Worked	Total Accidents	Frequency Rate	Days Lost	Severity Rate	Standing
Everett Pulp & Paper Co., Everett	72,107	0	0	0	0	1
Grays Harbor Pulp & Paper Co., Hoquiam	52,178	0	0	0	0	2
Puget Sound Pulp & Timber Co., Everett	49,152	0	0	0	0	3
Fibreboard Products, Inc., Port Angeles	21,295	0	0	24	1.127	4
Crown Willamette Paper Co., Camas	179,442	1	5.57	98	.546	5
National Paper Products Co., Port Townsend	68,496	1	14.6	6	.088	6
Inland Empire Paper Co., Millwood	34,014	1	29.4	49	1.442	7
Rainier Pulp & Paper Co., Shelton	54,719	2	36.6	24	.439	8
Puget Sound Pulp & Timber Co., Bellingham	24,479	1	40.9	1	.041	9
Fibreboard Products, Inc., Sumner	22,620	1	44.2	20	.884	10
Longview Fibre Co., Longview	87,489	5	57.2	64	.732	11
Washington Pulp & Paper Co., Port Angeles	49,711	4	80.5	57	1.146	12
Columbia River Paper Mills, Vancouver, Wash.	31,973	4	125.1	43	1.345	13
Weyerhaeuser Timber Co., Longview	36,901	8	216.8	108	2.927	14

The following mills did not report—Pacific Straw & Board Co.; Pacific Coast Paper Mills. The following mills were not in operation—Everett Pulp & Paper Co. (West Tacoma Plant); Tumwater Paper Mills; St. Regis Kraft Co.; Puget Sound Pulp & Timber Co., and Shafer Box Co.

THE DRAPER FELT

Unexcelled for strength, openness, resiliency, and general running qualities. Made to meet the most exacting conditions on all types of machines and all kinds of papers. Only one grade and that the highest.

Made by

DRAPER BROTHERS COMPANY

CANTON, MASS.

Woolen Manufacturers Since 1856

Pacific Coast Representative:

PACIFIC SALES CO., Security Bldg., Portland, Oregon

PORT TOWNSEND WOOD MILL PROGRESSES

Work on the new cut-up plant of the National Paper Products Co. at Port Townsend, Wash., is progressing rapidly. It is expected that it will be complete and in operation the latter part of August. The new wood mill and chipping plant will contain some new and novel features of considerable interest, it is said.

TEN PER CENT WAGE INCREASES REPORTED

Wage increases in accordance with the current trend in industry have been reported going into effect at several Coast pulp and paper mills, notably the Olympic Forest Products, the Grays Harbor Pulp & Paper Co. and others. It is anticipated that the movement will become general if and when better prices are experienced as a result of improved conditions believed coming through industry control.

The Hawley Pulp & Paper Company of Oregon City has announced to its employes that an adjustment upwards in wages and salaries will be put into effect within a reasonable time.

John H. Smith, vice-president of the Hawley firm, has issued the following statement to the mill employes:

"The primary purpose of the Industrial Recovery act just signed by President Roosevelt is to more equitably spread employment and to increase wages.

"The management is heartily in favor of such action and hopes the purposes of the action will be successfully achieved. We anticipate an adjustment upwards in wages and salaries will be put into effect by the company within a reasonable time.

"The amount of increase and the date it becomes effective depends materially upon the future selling prices of our products, particularly newsprint."

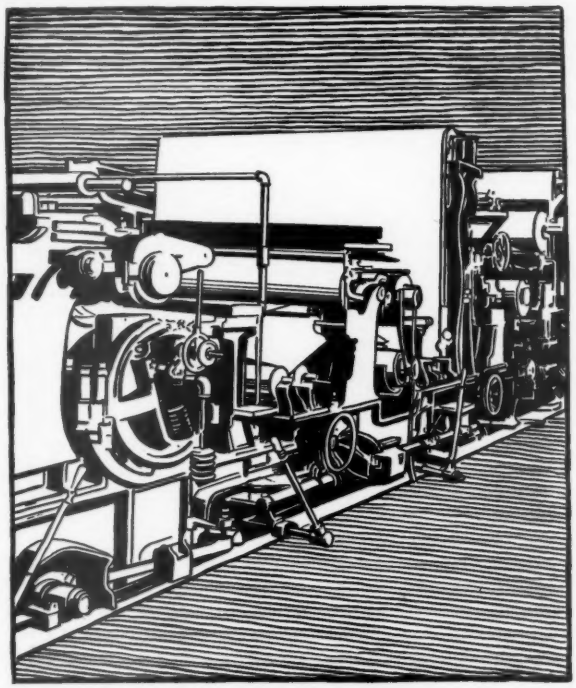
NEW DISCOVERIES IN CELLULOSE

Chemical science is on the verge of important discoveries in the field of wood utilization as chemical raw material and an almost unlimited field awaits it, Dr. E. C. Sherrard of Madison, Wis., said in a paper at the Fifth Pacific Science Congress meeting in Vancouver, B. C., early in June. The paper was read to the Congress by Dr. W. C. Laudermilk of Berkeley, Cal. Progress within the next few years, he said, would be rapid.

Dr. Sherrard, principal chemist at the United States Department of Agriculture laboratory at the University of Wisconsin, stated present utilization is mainly confined to production of cellulose materials. The scope for future research in the more economic employment of all three components of wood—cellulose, lignin and extraneous materials—was practically unlimited and the rewards attractive.

Recent discoveries in the field were numerous. Galactan had been extracted from the western larch and when oxidized to muric acid was well adapted for use in baking powders, soft drinks, effervescent salts and other food preparations. Sugar had been produced from wood, cellulose converted into acetic acid, lactic acid and other commercially important solvents and moulded plastics developed from lignin.

Among numerous problems yet to be solved in the chemistry of wood was the necessity of developing methods of converting unstable cell-wall material from pulp into useful products and for similarly employing the unrecovered lignin comprising nearly one-fourth of the original wood. Another was development of an inexpensive method of moulding or forming waterproof containers such as milk bottles or food containers.



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Or Are You Taking It For Granted

that the felts you are now replacing on your machine every few days are the very best felts for your particular requirements?

Satisfactory water removal is important, 'tis true . . . but not the whole of the story. Are your present felts showing the wearing qualities you have the right to expect? That also is important.

It would pay you to check up by switching over to Orrs for a spell. Mills that try this method of checking up usually learn something about the relative merits of various brands that stands them in good stead ever after.

Orrs are also unexcelled for their water-removing qualities.

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To meet the most exacting needs of the Superintendent of today . . .

Specify **TENAX FELTS** on your next order.

NON-USERS ARE THE LOSERS

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